L Number		Search Text	DB	Time stamp
6	11	("5763028" "5364665" "5695836" "4001870" "5229172").pn.	USPAT;	2003/09/09 15:31
			US-PGPUB;	
			EPO; JPO;	
		·	DERWENT;	
	1		IBM_TDB	
7	13	("5763028" "5364665" "5695836" "4001870" "5229172" "6376559").pn.	USPAT;	2003/09/09 17:54
			US-PGPUB;	
		To the state of th	EPO; JPO;	
		•	DERWENT;	
			IBM_TDB	
8	3	ogawa.in. and plasma near9 argon and polypropylene	USPAT;	2003/09/09 16:13
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	1		IBM TDB	
12	149	(kazufumi near3 ogawa).in. and plasma	USPAT;	2003/09/09 16:15
		· · · · · · · · · · · · · · · · · · ·	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
		,	IBM TDB	
11	1	(kazufumi near3 ogawa).in. and plasma near9 argon	USPAT;	2003/09/09 16:15
		, , , , , , , , , , , , , , , , , , , ,	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	ì
13	12	(kazufumi near3 ogawa).in. and plasma and (ar (inert near2 gas) argon)	USPAT;	2003/09/09 16:22
	1	(Mazaranin nears ogawa). ni. ana piasina ana (ai (mort nearz gas) argon)	US-PGPUB;	2003/05/05 10.22
		*	EPO; JPO;	
			DERWENT;	,
			IBM TDB	1
14	3714	plasma near9 (ar (inert near2 gas) argon) same oxygen	USPAT;	2003/09/09 16:23
	3714	plasma hear? (ai (mort hear2 gas) argon) same oxygen	US-PGPUB;	2003/07/09 10.23
			EPO; JPO;	*
			DERWENT;	
	Ĭ		IBM TDB	
15	244	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma	USPAT;	2003/09/09 16:24
13	244	near9 treat\$9 same (plastic polypropylene polymeric)	US-PGPUB;	2003/09/09 10.24
		hears treats same (plastic porypropytene porymete)	EPO; JPO;	
			DERWENT;	
			IBM_TDB	
16	63	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma	USPAT;	2003/09/09 16:25
10	03	near9 treat\$9 same polypropylene same (surface substrate)	US-PGPUB;	2003/09/09 10.23
		leary treatily static polypropytene same (surface substrate)	EPO; JPO;	
			DERWENT;	
	1.			
17	83	( plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma	IBM_TDB	2003/00/00 16:25
1/	63	near9 treat\$9 same (polypropylene polyolefin polyethylene) near9	USPAT;	2003/09/09 16:25
		(surface substrate)	US-PGPUB;	
		(Surface Substrate)	EPO; JPO;	
			DERWENT;	
18	50	arrivan arma (in ord halium a server) arm 1	IBM_TDB	2002/00/00 : : : :
	52	oxygen same (inert helium ar argon) same plasma near9 treat\$9 same	USPAT;	2003/09/09 16:26
		(polypropylene polyolefin polyethylene) near9 (surface substrate)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
19	40	2	IBM_TDB	0000/00/00 11 55
	. 42	oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene	USPAT;	2003/09/09 16:29
		polyolefin polyethylene) near9 (surface substrate)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	0		IBM_TDB	

21 22	2	(oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene polyolefin polyethylene) near9 (surface substrate)) same ((reactive near3 functional\$4) hydroxy\$2)  oxygen same (ar argon) same plasma same (polypropylene polyolefin polyethylene) near9 (surface substrate film) same ((reactive near3 functional\$4) hydroxy\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB USPAT; US-PGPUB;	2003/09/09 16:28
		functional\$4) hydroxy\$2)  oxygen same (ar argon) same plasma same (polypropylene polyolefin polyethylene) near9 (surface substrate film) same ((reactive near3)	EPO; JPO; DERWENT; IBM_TDB USPAT;	2003/09/09 16:42
		oxygen same (ar argon) same plasma same (polypropylene polyolefin polyethylene) near9 (surface substrate film) same ((reactive near3	DERWENT; IBM_TDB USPAT;	2003/09/09 16:42
		polyethylene) near9 (surface substrate film) same ((reactive near3	IBM_TDB USPAT;	2003/09/09 16:42
		polyethylene) near9 (surface substrate film) same ((reactive near3	USPAT;	2003/09/09 16:42
		polyethylene) near9 (surface substrate film) same ((reactive near3		\ \(\alpha\)\(\overline{\pi}\)
22				1
22			EPO; JPO;	
22			DERWENT;	
22	1		IBM_TDB	
22	2	"20020098296"	USPAT;	2003/09/09 16:43
	-	20020070270	US-PGPUB;	2003/07/07 10.43
			EPO; JPO;	
	ľ		DERWENT;	
		·	IBM TDB	į
23	60	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:56
23	00	SiO\$2)	US-PGPUB;	2003/07/07 17.30
		10042)	EPO; JPO;	
		÷	DERWENT;	
			IBM_TDB	
24	38	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:58
	30	SiO\$2) near9 (layer film coat\$3)	US-PGPUB;	2003/07/07 17:30
		1 10002) heary (layer time county)	EPO; JPO;	
			DERWENT;	
	1		IBM_TDB	,
25	19	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 18:14
	1,5	SiO\$2) near9 (layer film coat\$3)) same thick\$8	US-PGPUB;	2003/03/07 10:14
	į	(layer min courts)) same merco	EPO; JPO;	
		·	DERWENT;	
			IBM_TDB	
26	27	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 18:07
20		SiOx) near9 (layer film coat\$3)	US-PGPUB;	2003/03/03 18.07
		orony nears (kayer min equato)	EPO; JPO;	×
			DERWENT;	
			IBM_TDB	
27	15	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:58
		SiOx) near9 (layer film coat\$3)) same thick\$8	US-PGPUB;	2005/05/05 17.50
		orony nears (layer min coulds)) sume intercept	EPO; JPO;	
1			DERWENT;	
			IBM_TDB	
28	117	(orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same	USPAT;	2003/09/09 18:14
		((silicon near3 oxide) SiO\$1x\$1)	US-PGPUB;	2003/03/03 10:11
		((Silver hear office) brownings)	EPO; JPO;	
			DERWENT;	
			IBM TDB	
29	47	((orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same	USPAT;	2003/09/09 18:15
		((silicon near3 oxide) SiO\$1x\$1)) same thick\$8	US-PGPUB;	
ļ		(	EPO; JPO;	
	ļ		DERWENT;	
	(		IBM_TDB	

Search History 9/9/03 6:24:44 PM Page 2 C:\APPS\EAST\Workspaces\10058925-tuning O-Si-O.wsp DERWENT-ACC-NO: 1993-175942

Page 1 of 2

DERWENT-

1993-175942

ACC-NO:

DERWENT-

199322

WEEK:

COPYRIGHT 1999 DERWENT INFORMATION LTD

TITLE:

Thermo-formable composite laminate with gas barrier properties - used for food container prodn., has inner sealable plastic layer, outer plastic layer and intermediate

layer of (semi)metal oxide

INVENTOR: NAEGELI, H; PIETZSCH, J; RUEEGG, K

PATENT-ASSIGNEE: ALUSUISSE LONZA SERVICES AG[SWAL]

**PRIORITY-DATA:** 1990CH-0001882 (June 6, 1990)

**PATENT-FAMILY:** 

PUB-NO PUB-DATE LANGUAGE PAGES MAIN-IPC

CH 681530 A5 April 15, 1993 N/A

005

B65D 065/40

**APPLICATION-DATA:** 

PUB-NO APPL-DESCRIPTOR APPL-NO

APPL-DATE

CH 681530A5 N/A

1990CH-0001882 June 6, 1990

INT-CL (IPC): B32B027/06, B65D065/40

ABSTRACTED-PUB-NO: CH 681530A

## **BASIC-ABSTRACT:**

Container with barrier properties w.r.t gases and vapours made from a thermoformable or stretch formable composite laminate comprising a sealable plastics inner layer, a plastics outer layer and an intermediate layer between these comprising a layer of an oxide of a metal or semimetal or a mixt. of oxides of metals and/or semimetals applied to at least one plastic layer.

The inner and outer plastics layers are e.g films, composite films or laminates made up of polyolefins such as polyethylene or polypropylene; polyesters such as polyethylene tetephthalate; PVC; polystyrene; polyamides such as PA6, PA66, PA12, etc., copolymers of known materials, etc. The thickness of the individual plastics layers is e.g, 8-2000 (pref. 10-600) microns. The film is esp. mono- or biaxially oriented. The oxide layer is pref. of an oxide of Si, Al, Cr, Ta, Ni, Mo or Pb and is esp. of SiOx where x = 1-2 or AlOy with y = 0.2-1.5. The oxide layer(s) are pref. 5-500nm, esp. 10-200nm and partic. 20-1560nm thick. The oxide layers are applied by vacuum thin layer techniques based e.g, on electron beam vapourisation or inductive heating of crucibles.

USE/ADVANTAGE - Conventional laminates contg. a thin Al foil layer as barrier material can only be stretched with very narrow limits, whereas the present laminates can be thermoformed or stretch formed

http://127.0.0.1:4343/C:/APPS/EAST/cache/eas20030909181722181.tmp?text\_font=Times%2... 9/9/03

into packaging containers with good rigidity and good barrier properties w.r.t. gases and vapours, and which are transparent to light and to microwaves. The containers are esp. useful for food and perishable items and offer good protection against shock, oxidn. and other external mechanical, chemical and microbial influences to allow long term storage.

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A35 A92 P73 Q34

**CPI-** A05-F01E1; A05-F05; A09-A; A09-A01; A09-A06; A11-B08B; A12-C02; A12-P01A;

**CODES:** A12-S05A; A12-S06C;